

CLAIMS:

1. An integrated circuit comprising a conductive line received over a semiconductive substrate and a diffusion region within the substrate proximate the line, the diffusion region and substrate forming a junction which is effectively reverse biased to preclude shorting between the conductive line and the substrate through any conductive material extending therebetween for selected magnitudes of current provided through the conductive line.

2. The integrated circuit of claim 1, wherein the conductive material comprises metal.

3. The integrated circuit of claim 1, wherein a portion of the diffusion region is disposed directly under conductive portions of the conductive line.

4. The integrated circuit of claim 1, wherein the diffusion region comprises two individual diffusion regions disposed respectively on each side of the conductive line.

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1 5. An integrated circuit comprising a conductive line received  
2 over a semiconductive substrate and a diffusion region within the  
3 substrate proximate the line, conductive material being received over the  
4 line and interconnecting it with the diffusion region, the diffusion region  
5 being effectively reverse biased to preclude shorting between the  
6 conductive line and the substrate through the conductive material for  
7 selected magnitudes of current provided through the conductive line.

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9 6. The integrated circuit of claim 5, wherein the conductive  
10 material comprises metal.

11  
12 7. The integrated circuit of claim 5, wherein a portion of the  
13 diffusion region is disposed under conductive portions of the conductive  
14 line.

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16 8. The integrated circuit of claim 5, wherein the diffusion  
17 region comprises two individual diffusion regions disposed respectively on  
18 each side of the conductive line.

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1 9. A method of contacting a line comprising:  
2 providing a substrate comprising a first-type dopant;  
3 forming a conductive line over the substrate, the line comprising  
4 a portion with which electrical connection is to be made;  
5 forming a diffusion region within the substrate proximate the  
6 conductive line portion and comprising a second-type dopant which is  
7 different from the first-type dopant, the conductive line portion and  
8 diffusion region forming a contact pad for the conductive line; and  
9 forming conductive material in electrical contact with the contact  
10 pad.

11  
12 10. The semiconductor conductive line-contacting method of  
13 claim 9, wherein the forming of the conductive material comprises  
14 forming metal material in electrical contact with the contact pad.

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16 11. The semiconductor conductive line-contacting method of  
17 claim 9, wherein the first-type dopant comprises n-type dopant.

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19 12. The semiconductor conductive line-contacting method of  
20 claim 9, wherein the first-type dopant comprises p-type dopant.

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1 13. The semiconductor conductive line-contacting method of  
2 claim 9, wherein the forming of the conductive line comprises forming  
3 the conductive line to have an average lateral width dimension, and  
4 wherein the conductive line portion has a lateral width dimension which  
5 is substantially equivalent to the average lateral width dimension.  
6

7 14. The semiconductor conductive line-contacting method of  
8 claim 9, wherein the forming of the conductive line comprises forming  
9 the conductive line to have a generally uniform lateral width dimension  
10 along its entirety.  
11

12 15. The semiconductor conductive line-contacting method of  
13 claim 9, wherein the forming of the diffusion region defines a pn  
14 junction within the substrate, and further comprising reverse biasing the  
15 pn junction.  
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17 16. The semiconductor conductive line-contacting method of  
18 claim 9, wherein the forming of the diffusion region defines a pn  
19 junction within the substrate, and further comprising reverse biasing the  
20 pn junction after the forming of the conductive material.  
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1 17. A method of forming a contact comprising:  
2 forming a plurality of conductive lines over a substrate;  
3 forming diffusion regions within the substrate and elevationally  
4 below the conductive lines, individual diffusion regions being disposed  
5 proximate respective individual conductive line portions, individual  
6 conductive line portions and individual associated diffusion regions  
7 collectively effectively defining individual contact pads with which  
8 electrical connection is desired for the individual conductive lines;  
9 forming insulative material over the conductive line portions and  
10 diffusion regions;  
11 forming contact openings through the insulative material over and  
12 exposing portions of the individual contact pads; and  
13 forming conductive contacts within the contact openings and in  
14 electrical connection with individual contact pads.

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16 18. The method of forming a contact of claim 17, wherein the  
17 forming of the conductive contacts comprises depositing metal within the  
18 contact openings.

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20 19. The method of forming a contact of claim 17, wherein the  
21 forming of the plurality of conductive lines comprises forming one of  
22 the conductive lines to have a lateral width dimension away from its  
23 conductive line portion which is substantially equivalent to the lateral  
24 width dimension of its conductive line portion.

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1 20. The method of forming a contact of claim 17, wherein the  
2 forming of the plurality of conductive lines comprises forming individual  
3 conductive lines to have lateral width dimensions away from their  
4 respective conductive line portions which are substantially equivalent to  
5 the lateral width dimensions of their conductive line portions.

6  
7 21. The method of forming a contact of claim 20, wherein the  
8 forming of the plurality of conductive lines comprises forming said  
9 conductive lines to have substantially equivalent lateral width dimensions.

10  
11 22. The method of forming a contact of claim 17, wherein the  
12 substrate comprises one type dopant, and the forming of the diffusion  
13 regions comprises forming said diffusion regions with a different type  
14 dopant.

15  
16 23. The method of forming a contact of claim 22, wherein the  
17 one type dopant comprises n-type dopant.

18  
19 24. The method of forming a contact of claim 22, wherein the  
20 one type dopant comprises p-type dopant.

21  
22 25. The method of forming a contact of claim 17, wherein the  
23 forming of the diffusion regions comprises forming said diffusion regions  
24 after forming the plurality of conductive lines.

1 26. The method of forming a contact of claim 17, wherein the  
2 forming of the diffusion regions comprises forming pn junctions within  
3 the substrate, and further comprising reverse-biasing the pn junctions.  
4

5 27. A method of contacting a line comprising:

6 providing a substrate having a diffusion region formed therein, the  
7 substrate and diffusion region being configured for biasing into a  
8 reverse-biased diode configuration;

9 forming a conductive line over the substrate, the conductive line  
10 and diffusion region being formed operably proximate one another and  
11 collectively defining an effective contact pad with which electrical  
12 connection is desired;

13 forming an insulative material over the contact pad;

14 forming a contact opening through the insulative material and  
15 exposing at least a portion the contact pad; and

16 forming conductive material within the contact opening and in  
17 electrical connection with the contact pad.  
18

19 28. The semiconductor conductive line-contacting method of  
20 claim 27, wherein the substrate and the diffusion region provide a pn  
21 junction.  
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23 29. The semiconductor conductive line-contacting method of  
24 claim 28, wherein the substrate comprises n-type dopant.

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1 30. The semiconductor conductive line-contacting method of  
2 claim 28, wherein the substrate comprises p-type dopant.

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4 31. The semiconductor conductive line-contacting method of  
5 claim 27, wherein the forming of the conductive material comprises  
6 forming said material to electrically contact both the conductive line and  
7 the diffusion region.

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9 32. The semiconductor conductive line-contacting method of  
10 claim 27, wherein the forming of the contact opening comprises forming  
11 said opening to overlap with the conductive line and the diffusion  
12 region.



1 33. A method of contacting a line comprising:  
2 providing a substrate comprising a first-type dopant;  
3 forming a conductive line over the substrate comprising a  
4 conductive line portion with which electrical connection is to be made;  
5 forming an area within the substrate proximate the conductive line  
6 portion and comprising a second-type dopant which is different from the  
7 first-type dopant, the conductive line portion and area forming a contact  
8 pad for the conductive line, the area and substrate defining a pn  
9 junction;  
10 forming conductive material in electrical contact with the contact  
11 pad; and  
12 reverse-biasing the pn junction.

13  
14 34. The semiconductor conductive line-contacting method of  
15 claim 33, wherein said area extends under conductive portions of the  
16 conductive line.

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18 35. The semiconductor conductive line-contacting method of  
19 claim 33, wherein the first-type dopant comprises p-type dopant.

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21 36. The semiconductor conductive line-contacting method of  
22 claim 33, wherein the first-type dopant comprises n-type dopant.  
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1 37. The semiconductor conductive line-contacting method of  
2 claim 33, wherein the conductive line portion of the contact pad has  
3 a lateral width dimension which is substantially the same as a lateral  
4 width dimension of the conductive line away from the contact pad.  
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38. A method of forming contacts comprising:

forming a plurality of conductive lines over a substrate, individual conductive lines having first conductive line portions with which electrical and physical connection is desired and second conductive line portions which are joined with the first conductive line portions and in electrical communication therewith, individual conductive lines having pitches relative to respective next adjacent lines, at least one of the conductive lines having a pitch between its first conductive line portion and a next adjacent line which is substantially the same as a pitch between its second conductive line portion and the next adjacent line;

forming individual diffusion regions proximate the first conductive line portions of the conductive lines, the first conductive line portions and individual diffusion regions collectively effectively defining individual contact pads for the individual conductive lines, the diffusion regions and substrate providing individual respective pn junctions elevationally below the conductive lines;

forming insulative material over the conductive lines and diffusion regions;

forming contact openings through the insulative material over and exposing portions of individual contact pads;

forming conductive contacts within the contact openings and in electrical connection with individual contact pads; and

reverse-biasing the pn junctions.

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1 39. The method of claim 38, wherein the first and second  
2 conductive line portions of said at least one conductive line have lateral  
3 width dimensions which are substantially the same.

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5 40. The method of claim 38, wherein the first and second  
6 conductive line portions of said next adjacent line have lateral width  
7 dimensions which are substantially the same.

8  
9 41. The method of claim 38, wherein:  
10 the first and second conductive line portions of said at least one  
11 conductive line have lateral width dimensions which are substantially the  
12 same; and

13 the first and second conductive line portions of said next adjacent  
14 line have lateral width dimensions which are substantially the same.

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16 42. The method of claim 38, wherein the forming of the contact  
17 openings comprises forming contact openings over every other line which  
18 are disposed along a generally straight line.

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20 43. The method of claim 38, wherein the forming of the  
21 diffusion regions comprises forming diffusion regions on either side of  
22 the first conductive line portions of at least some of the conductive  
23 lines.  
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1 44. A method of operating integrated circuitry comprising:  
2 providing a reverse-biased pn junction elevationally lower than a  
3 conductive line which is formed over a substrate, said junction being  
4 provided within the substrate and proximate a portion of the conductive  
5 line, the reverse-biased pn junction and the conductive line portion  
6 providing a contact pad for conductive material which is provided over  
7 and in electrical contact with the contact pad through insulative material  
8 which is provided over the conductive line portion and at least some  
9 of the pn junction; and

10 providing electrical current through the conductive line and  
11 conductive material, the reverse-biased pn junction being sufficiently  
12 biased to preclude electrical shorting between the conductive line and  
13 the substrate for selected magnitudes of electrical current.

14  
15 45. The method of claim 44, wherein the reverse-biased pn  
16 junction comprises a diffusion region which extends under an entirety  
17 of the conductive line portion.

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19 46. The method of claim 44, wherein the reverse-biased pn  
20 junction comprises a pair diffusion regions which extend on either side  
21 of the conductive line portion.  
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1 47. The method of claim 44, wherein the substrate comprises p-  
2 type dopant and the pn junction is defined in part by a n-type  
3 diffusion region.

4  
5 48. The method of claim 44, wherein the substrate comprises n-  
6 type dopant and the pn junction is defined in part by a p-type  
7 diffusion region.

8  
9 49. A method of operating integrated circuitry comprising:  
10 providing a substrate comprising a first-type dopant;  
11 providing a conductive line over the substrate comprising a  
12 conductive line portion;  
13 providing a diffusion region within the substrate proximate the  
14 conductive line portion and comprising a second-type dopant which is  
15 different from the first-type dopant, the conductive line portion and  
16 diffusion region forming a contact pad for the conductive line;  
17 providing conductive material in electrical contact with the contact  
18 pad; and  
19 providing a voltage potential across the substrate and diffusion  
20 region sufficient to provide a reverse-biased diode construction configured  
21 to preclude shorting between the conductive line and the substrate for  
22 selected magnitudes of current provided through the conductive line.

23 add B2

add  
D3

add  
C.1